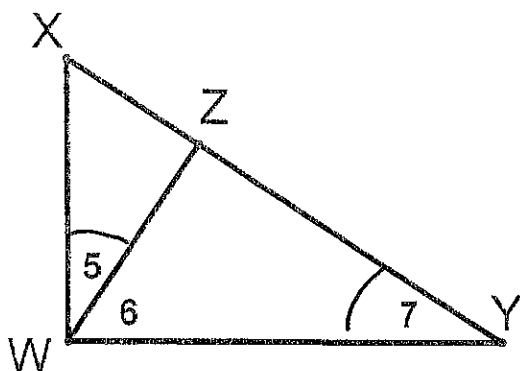


Name Key

Date \_\_\_\_\_

202 More Chapter 2 Proofs  
(2.6-2.8 worksheet #3)

1. Given:  $\angle 6$  and  $\angle 7$  are complementary  
 $m\angle 7 = m\angle 5$

Prove:  $\overline{WX} \perp \overline{WY}$ 

Statements

Reasons

1.  $\angle 6 + \angle 7$  are compl.  
 $m\angle 7 = m\angle 5$

1. Given

2.  $m\angle 6 + m\angle 7 = 90$

2. Def. of complementary

3.  $m\angle 6 + m\angle 5 = 90$

3. Subst

4.  $m\angle 6 + m\angle 5 = m\angle XWY$

4. AAP

5.  $m\angle XWY = 90$

5. Substitution

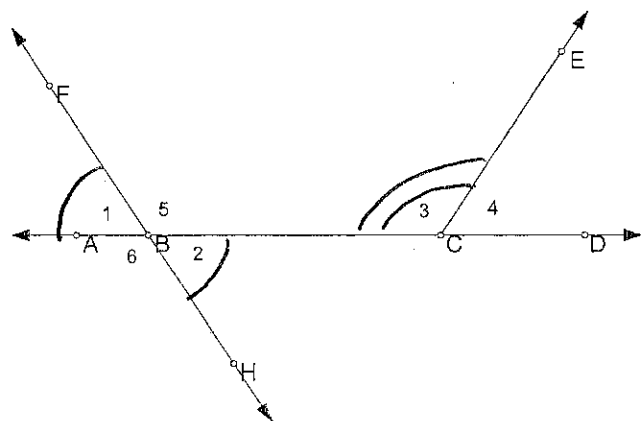
6.  $\angle XWY$  is a rt  $\angle$

6. Def. of right angle

7.  $\overline{WX} \perp \overline{WY}$

7. def of  $\perp$  lines

2. Given:  $\angle 2$  and  $\angle 3$  are supplementary  
 Prove:  $\angle 1 \cong \angle 4$



Statements

Reasons

①  $\angle 2 + \angle 3$  are suppl

① Given

②  $\angle 4 + \angle 3$  are suppl

② Suppl Thm

③  $\angle 2 \cong \angle 4$

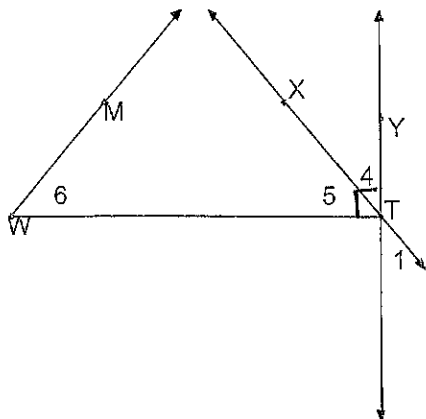
③ Suppl. of  $\cong$   $\angle$ s are  $\cong$ 

④  $\angle 1 \cong \angle 2$

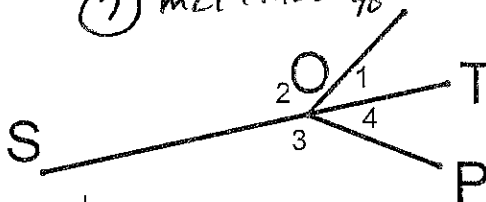
④ Vert  $\angle$ s  $\cong$ 

⑤  $\angle 1 \cong \angle 4$

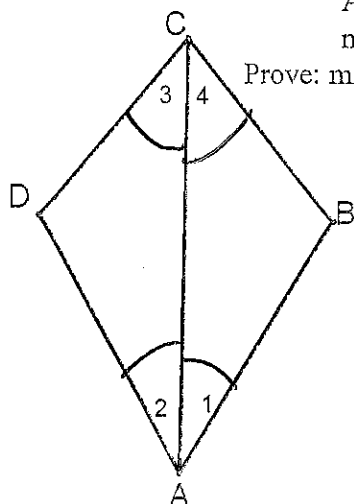
⑤ Transitive

3. Given:  $\overline{TY} \perp \overline{TW}$ Prove:  $m\angle 1 + m\angle 5 = 90$ 

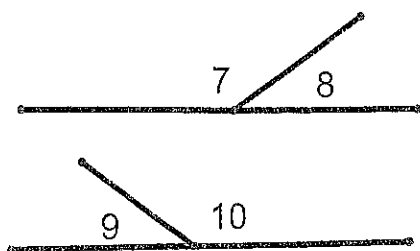
Statements	Reasons
① $\overline{TY} \perp \overline{TW}$	① Given
② $\angle WTY$ is a rt $\angle$	② def of $\perp$
③ $\angle 4 + \angle 5$ are complementary	③ Compl. thm
④ $m\angle 4 + m\angle 5 = 90$	④ def of Compl.
⑤ $\angle 1 \cong \angle 4$	⑤ Vert. $\angle$ s $\cong$
⑥ $m\angle 1 = m\angle 4$	⑥ def of $\cong$
⑦ $m\angle 1 + m\angle 5 = 90$	⑦ Subst.

4. Given:  $\overline{OT}$  bisects  $\angle QOP$ Prove:  $\angle 3 \cong \angle 2$ 

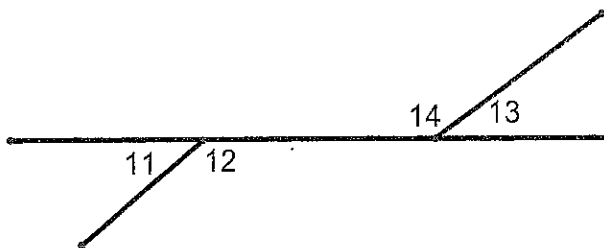
Statements	Reasons
① $\overline{OT}$ bisects $\angle QOP$	① Given
② $\angle 1 \cong \angle 2$	② Def of $\angle$ Bis.
③ $\angle 1 + \angle 2$ are $\angle$ suppl. $\angle 3 + \angle 4$ are $\angle$ suppl.	③ Suppl. thm
④ $\angle 3 \cong \angle 2$	④ Suppl. of $\cong \angle$ s are $\cong$

5. Given:  $\overline{AC}$  bisects  $\angle DAB$  $\overline{AC}$  bisects  $\angle BCD$  $m\angle 1 = m\angle 3$ Prove:  $m\angle DAB = m\angle DCB$ 

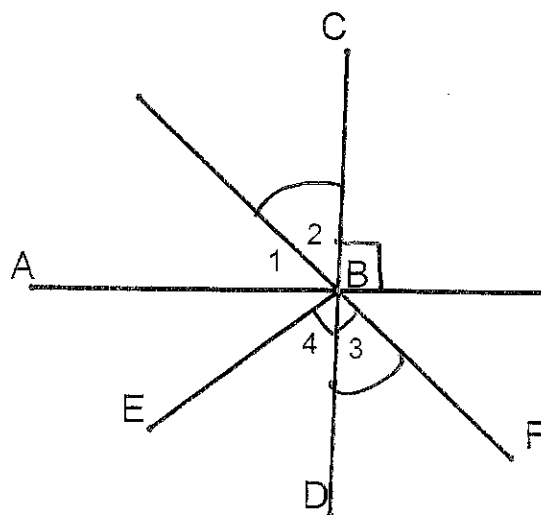
Statements	Reasons
1. ~	1. Given
2. $m\angle 1 = m\angle 2$ $m\angle 3 = m\angle 4$	2. def of $\angle$ Bisector
3. $m\angle DAB = m\angle 1 + m\angle 2$ $m\angle DCB = m\angle 3 + m\angle 4$	3. AAP
4. $m\angle DAB = m\angle 1 + m\angle 1$ $m\angle DCB = m\angle 3 + m\angle 3$	4. subst.
5. $m\angle DAB = 2m\angle 1$ $m\angle DCB = 2m\angle 3$	5. subst.
6. $m\angle 1 = m\angle 3$	6. Given
7. $2m\angle 1 = 2m\angle 3$	7. mult
8. $m\angle DAB = m\angle DCB$	8. subst.

6. Given:  $\angle 8 \cong \angle 9$ Prove:  $\angle 7 \cong \angle 10$ 

Statement	Reasons
① $\angle 8 \cong \angle 9$	① Given
② $\angle 7 + \angle 8$ are suppl. $\angle 9 + \angle 10$ are suppl.	② The Suppl. thm
③ $\angle 7 \cong \angle 10$	③ Suppl. of $\cong \angle$ s are $\cong$

7. Given:  $\angle 11 \cong \angle 13$ Prove:  $\angle 12 \cong \angle 14$ 

Statement	Reasons
① $\angle 11 \cong \angle 13$	① Given
② $\angle 11 + \angle 12$ are suppl. $\angle 13 + \angle 14$ are suppl.	② The Suppl. thm
③ $\angle 12 \cong \angle 14$	③ Suppl. of $\cong \angle$ s are $\cong$

8. Given:  $\overline{AB} \perp \overline{BC}$ ;  $\overline{BE} \perp \overline{BF}$ Prove:  $\angle 1 \cong \angle 4$ 

Statements	Reasons
① $\overline{AB} \perp \overline{BC}$ $\overline{BE} \perp \overline{BF}$	① Given
② $\angle ABC$ is a rt $\angle$ $\angle EBF$ is a rt $\angle$	② def of $\perp$ lines
③ $\angle 1 + \angle 2$ are compl. $\angle 3 + \angle 4$ are compl.	③ Compl. thm
④ $\angle 3 \cong \angle 2$	④ Vertical $\angle$ s are $\cong$
⑤ $\angle 1 \cong \angle 4$	⑤ Compl. of $\cong \angle$ s are $\cong$